

NEWS LETTER

PLANT QUARANTINE AND CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

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TECHNOLOGICAL

Plans and specifications are being prepared for much needed repairs on fumigation houses along the Mexican border. New partition doors are to be installed in the Brownsville, El Paso, and Nogales houses, and new end doors in the house at Eagle Pass. The type of door construction will be similar to those installed at Laredo and to the outside doors installed in the new fumigation house at Presidio. A method of gas disposal will also be installed in connection with the house at Nogales, consisting of a ventilating stack and a blower for exhausting the gas from the fumigation chambers, conducting it up into the air, and dispersing it at a sufficient distance from the ground so that all danger of toxic concentrations will be eliminated in the vicinity of the house. The repairs and improvements planned for the fumigation houses this spring should put them in good condition.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Mediterranean fruit fly from Italy.--Thirty-eight living larvae of the Mediterranean fruit fly (Ceratitis capitata Wied.) were intercepted at Philadelphia in seven tangerines in the mail from Italy, and one living larva of the same fruit fly was found at Philadelphia in an orange in the mail from Italy.

Mealybug from Japan.--The mealybug Pseudococcus kraunhiae (Kuwana) was intercepted at San Francisco on tangerines in stores from Japan.

Weevil from Austria.--Anthonomus rectirostris Linn. (Curculionidae) was intercepted at Washington, D. C., with Prunus avium seed in the mail from Austria. The larva of this European weevil feeds on the seeds of cherry and other fruits, preventing the fruit from ripening.

Scale insect on orchids.--Hemichionaspis townsendi Cockerell (Coccidae) was intercepted at Honolulu, Hawaii, on orchids (Vanda spp.) from the Philippines.

European corn borer in leek.--Two living larvae of the European corn borer (Pyrausta nubilalis Hbn.) were intercepted at Boston January 26, 1932, in the stems of leek (Allium porrum), in stores stated to come from Belgium. A single larva was found in each of two leeks in the ten pounds of this vegetable present in the ship's stores. To the best of our knowledge this is the first record of the occurrence of the European corn borer in this host.

Witteboom infested with scale insect.--Chionaspis leucadendri Brain (Coccidae) was intercepted at Philadelphia on witteboom or silver-leaf pine (Leucadendron argenteum) in ship's quarters from South Africa. The records of the Plant Quarantine and Control Administration show four previous interceptions of this scale insect from Africa.

Chestnuts infested with a weevil.--Larvae of Balaninus sp. (Curculionidae) were intercepted at New York in chestnuts in cargo from Portugal and Spain, and at Seattle, Wash., in chestnuts in cargo from Japan.

Coccid from Germany.--Lepidosaphes newsteadi Sulc. (Coccidae) was intercepted at Philadelphia on spruce needles in the mail from Germany. This is our first interception record of this scale insect from Germany, it having been taken previously from Japan.

Bruchid in sweet peas.--Bruchus tristictus Fabr. (Bruchidae) was intercepted at Washington, D. C., in sweet peas in the mail from The Netherlands. This bruchid was taken alive with Vicia sp. seed from Morocco in 1925.

Cipollini infested.--Larvae of Merodon sp. (Syrphidae) were intercepted at New York in cipollini (Muscari comosum) in cargo from Morocco.

Erotylid from Central America.--Aegithus meridionalis Crotch (Erotylidae) was intercepted at San Francisco with bananas in cargo from Panama. This erotyliid has also been intercepted with bananas from Costa Rica.

Cucujid from Honduras.--Adults of Telephanus setulosus Sharp (Cucujidae) were intercepted at Charleston, S. C., on banana in cargo from Honduras. W.S. Fisher, of the Bureau of Entomology, makes the following statement: "According to Nevermann the species we have been identifying from Honduras as agilis Grouv. is setulosus Sharp."

Coccid from the Philippines.--Pseudaonidia euculiginis (Green) (Coccidae) was intercepted at Honolulu, Hawaii, on the stem and leaf of an orchid (Vanda teres) in the mail from the Philippines.

Palm aphid from Japan.--Cerataphis lataniae Boisd. was intercepted at Seattle, Wash., on palms in ship's furnishings from Japan. The apterous form of this aphid resembles superficially an aleyrodid or coccid. This aphid is

reported as occurring in several localities in continental United States.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Diseased leeks from Japan were intercepted at Boston and Philadelphia. Mycosphaerella schoenoprasi and uredinia of Puccinia sp. were found in both lots of material. M. schoenoprasi is reported as occurring in China, Japan, and throughout Europe, but is not known to occur in this country. It had not been intercepted previously.

Puccinia kusanoi, a rust, was intercepted at Seattle on a bamboo leaf from Japan. This rust is listed in Stevenson's manual as occurring in Japan only. It was intercepted once before, at Honolulu.

Colletotrichum lagenarium was collected on squash leaves in a field near San Juan, Porto Rico, and sent in for determination. While squash is often subject to this disease in the United States, it apparently had not been reported as a host in Porto Rico.

Chinese waterchestnuts intercepted at Buffalo were found to be infected with Thielaviopsis sp. While the specimens were covered with a black growth of mycelium somewhat resembling that of Ceratostomella adiposum, which has been intercepted several times on similar material, the small "spines" or beaks of perithecia so characteristic of that fungus in advanced stages were absent and microscopic examination disclosed short, transparent, cylindrical spores within some of the hyphae and much larger egg-shaped, dark colored conidia also. Both types of spores are borne in chains. One of the specimens was rather soft and when cut gave off a more or less pleasant fruity odor. This odor as well as the spore forms are characteristic of species of Thielaviopsis. One of the specialists of the Bureau of Plant Industry has cultured the organism and confirms the diagnosis. He has asked for additional material of both Thielaviopsis sp. and Ceratostomella adiposum for study. It is possible the latter is the perfect stage of the former.

A few diseased berries were found in a package mailed from Newfoundland and intercepted at Detroit. Specialists of the Bureau of Plant Industry have made cultures from the berries in order to determine the diseases present. They would like to have additional specimens of diseased berries of Vaccinium spp. from Newfoundland as they have very little information regarding such diseases there. The berries received were a sort of wild cranberry, possibly of two species. Without leaves, twigs, or normal fruit, determination of the host species is difficult.

Nematode interceptions have included Pathoaphelenchus parietinus, the first definite determination on taro from Japan, first interceptions on onion and on carrot from Holland; Neotylenchus abulbosus, first interception on carrot from Holland; and Tylenchus tritici in wheat from China. All except the last of these interceptions were made at Philadelphia. The wheat nematode was intercepted at the Inspection House in Washington. Similar interceptions were made in 1915 and 1916. The diseased wheat kernels retained their form to a

certain extent but appeared small and dark colored. The nematodes practically replaced the normal contents of the grains and were so long and uniform in diameter from end to end that they appeared to be a mat of fungus mycelium until teased out and examined under relatively high power.

Elsinoe canavaliae interceptions continue in considerable numbers, particularly at New York. A Lima bean pod collected at a Wilmington, Del., market by J. F. Adams, of the Delaware Experiment Station, was received and the disease present determined as E. canavaliae.

Peculiar microscopic growths on Mexican jasmine plants intercepted at New Orleans were determined as Stilbella (Stilburn) flavida which produces conidia on small stalked knobs on various hosts. It has been intercepted twice before, on coffee from Costa Rica and Mexico.

Albugo candida was intercepted on Brussels sprouts from Belgium at New York. This is the first interception of the disease on this host although it was intercepted on turnip once (see News Letter for December, 1931, p. 3).

INTERESTING ORCHID SCALE

The News Letter of May, 1931, records the interception of a scale insect (Lepidosaphes tuberculata Mal.) on Cymbidium from England. Frequent interceptions of this scale have been previously made on Cymbidium from England, and it has also been intercepted on Cymbidium from Belgium, on Ophiopogon japonica from China, and on Brassolaeliacattleya zantea var. lunea from England. There are very few references in literature to this coccid. The countries from which it is recorded are England, Italy, Belgium, China, and Korea. It is not known to be of serious economic importance.

HIDING THEM FROM THE INSPECTOR

A letter from C. E. Bellis, Chief Inspector at Nogales, Ariz., February 2, adds the following to the list of interesting cases of concealment mentioned in the last issue of this News Letter:

"We recently made an interception here on the Pullmans which brings forcibly to mind the necessity for close inspection of compartments in Pullman cars, and the length to which people will sometimes go to try to get by with plant material. I will quote Mr. Wilbur's report on this incident: 'On inspection of the Pullmans which crossed from Mexico on January 30, restricted plants were found concealed in the Mexico City--Los Angeles car. Twenty-one specimens were found in five packages, concealed in the following manner: Two in a dark recess above the switchboard compartment in the vestibule which necessitated standing on the doorknob and using a flashlight; two more were found on a high ledge in the ladies' dressing room; and another behind the ceiling ventilator in the toilet. The lot was composed of 18 cacti of apparently 8 different varieties, and 3 other plants, apparently of a water type. All but four passengers had detrained on the Mexican side of the line. These remaining four all denied ownership of the material. Their baggage contained

no material of this nature."

TO MOIST CHAMBER STERILE SPOTS

Many plant disease interceptions do not have any spores or fruiting bodies when received in Washington, and determination of the causal organism may be impossible from the symptoms present. When not too slow growing and not overrun with saprophytes, it may be possible for us to induce some of the sterile material to sporulate by putting it in a moist chamber for a time. The period required may be only a few days or it may be weeks. A small amount of glassware has been purchased and an effort will be made to get material identifiable by the specialist from such of the sterile spots sent in as seem promising. Whether successful or not a notation will be made on the identification slip to indicate to the field inspector that the material was moist chambered.

PACKING MATERIALS USED IN IMPORTS

In an effort to list as completely as possible the materials coming in as packing with imported goods a request was sent out to several of the larger ports for any additions that could be made to the original list. From the answers which were usually prepared with the help of the customs appraisers, a complete list has been assembled. While it is probable that some slightly used materials have been overlooked, it is thought that there are included most of the materials used for the purpose of packing. As a matter of interest to all port inspectors the final list is here given.

Rice straw	Coconut hulls
Wheat straw	Coconut fiber
Other straws (oat, rye, etc.)	Books
Grasses	Old household linen (rags)
Meadow hay	Old clothing
Weeds	Thread waste
Cornstalks	Gunny cloth
Corn husks	Burlap
Sugarcane	Reed and tule matting
Bagasse	Wood chips
Fresh willow twigs	Wood shavings
Leaves (of various plants)	Excelsior
Cotton	Sawdust
Cottonseed hulls	Wood flour
Cottonseed	Cork dust
Cotton sweepings	Charcoal
Buckwheat hulls	Paper
Rice hulls	Paper pulp
Wheat hulls (chaff)	Scrap wool
Peanut hulls	Floor sweepings
Hemp fiber	Sand
Hemp hulls	

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Soil	Sisal waste
Mineral earths	Bark or bast fiber
Asbestos waste	Spanish moss
Kapok fiber	Sphagnum moss
Raw flax waste	Forest litter
Jute fiber	Seaweed
Maguey	Peat
Ixtle	Split bamboo canes
	Bamboo matting

FIRE DAMAGES INTERNATIONAL BRIDGE AT PRESIDIO

The railroad bridge at Presidio, Tex., making rail connections between Mexico and this country at that point, was damaged by fire on January 24, after a little over a year of service. Since there is still another bridge for foot passengers and vehicles at this place the fire has interrupted only railway car movements across the border. It is expected that repairs will soon be made so that railway traffic can be resumed.

FIELD INSPECTION BEGINS IN THE SOUTH

J. M. R. Adams left Washington on February 9 to make field inspections of plants brought in under special permit, and will cover in the ensuing ten weeks the territory south of Washington as far west as Texas and Arkansas.

DOMESTIC PLANT QUARANTINES

In response to frequent requests from nurserymen and others for summarized information on State regulations, the Office of Domestic Plant Quarantines, which serves as a clearing house for such information, has compiled a tabular summary of the general requirements for interstate trade in nursery stock. The compilation is a revision of "Table 1, General Requirements for Interstate Trade in Nursery Stock," published in two editions by the Bureau of Plant Industry prior to the organization of the Plant Quarantine and Control Administration. As heretofore, the summary has been reviewed and passed upon by the nursery inspection officials of the respective States. The revision shows an increase in the number of States which require the out-of-State nurserymen to obtain a license or permit. Such a permit is now made a condition for doing business in 34 States, as compared with 25 in 1925. The number of States requiring the fumigation of host plants of the San Jose scale has decreased from 8 in 1925, to 5 at present. Those requiring a bond have decreased from 11 to 8. While every State in the Union now has regulations relating to the certification of nursery stock, 5 western States either do not require the State inspection certificate on incoming stock, or place less emphasis upon it, preferring to rely upon the inspection which is made when the shipment arrives in the State. The following table gives the number of States which require certification of the plants listed. The District of Columbia

is included.

Plants for which certification (either at origin	: No. of States (incl.
or destination) is required for entry and	: D.C.) requiring
delivery	: inspection

Field-grown woody plants and parts thereof capable
of propagation:

Cultivated or nursery grown	49
Wild	44

Greenhouse or house-grown plants:

Herbaceous, such as geraniums	16
Woody, such as roses	40

Herbaceous biennials and perennials:

Cultivated flowering, such as phlox	25
and peonies	27
Native or wild	20
Vegetable perennial, such as rhubarb	14
Aquatic perennial	17
Strawberry	43

Bulbous plants:

Rhizomes, such as iris	28
Corms, such as gladiolus	22
Tubers, such as dahlias	23
Bulbs, such as tulip	24

Annual plants:

Flowering, such as asters	14
Vegetable, such as sweetpotato	19
and cabbage	13

Decorative plant material:

Cut flowers ¹	6
Other cuttings incapable of propagation	7

Seeds:

Fruit pits	14
Other seeds of fruit and ornamental trees or shrubs	14

¹ This applies only to citrus in Mississippi and to cape jasmine in Texas.

TRANSIT INSPECTION

Inspector K. S. Rohwer recently discovered that 28 bushels of corn cobs used in livestock bedding had been consigned from the Pittsburgh stockyards to points in New Jersey outside the area infested with the European corn borer. Through arrangements with the carrier, the cobs were burned or otherwise properly disposed of.

Although transit inspectors have seen occasional shipments of citrus fruits without permits from the Mexican fruit worm infested area in the Lower Rio Grande Valley of Texas, field officers report there is practically complete compliance with quarantine regulations, investigation having shown that rarely, if ever, were the consignors other than authorized shippers. Large quantities of citrus fruits are shipped from the valley, and the permit tags are occasionally lost in transit.

The Chicago office reports the interception of pop corn from Ohio apparently infested with the European corn borer.

Arrangements are being made with E. L. Chambers, State Entomologist of Wisconsin, for carrying on cooperative transit inspection at Milwaukee during the spring nursery stock shipping season.

An analysis of freight shipments of nursery stock in the winter has been made for the period from November, 1930, to February, 1931, inclusive. From the regulated areas of the Japanese beetle quarantine, 1,074 shipments were consigned during that period to 40 States, and from the gipsy moth and brown-tail moth areas, 197 shipments were consigned to 22 States. While the number of plants or other restricted articles involved in these two areas was not available, the estimate for those consigned from the Japanese beetle area is placed at more than 1,500,000 plants and 300,000 bulbs and roots. From records of shipments consigned to Rochester, N. Y., which were provided through the cooperation of J. A. Thompson, New York State Inspector, it was found that 671,650 plants were consigned by freight to that city from 21 States. This indicates the extent of the wholesale shipments between nurseries during the winter months. Available information as to routing indicated that more than 80 per cent of the L.C.L. nursery stock shipments consigned by freight from or to points in the Northeastern States pass through the following nine transfer yards:

- Cedar Hill - New Haven transfer.
- Sloane transfer - Sloane, N. Y. (East Buffalo).
- Freight Stations in Buffalo - N.Y.C., Erie, and Pa.
- West Albany Yards - N.Y.C. and B. & A. transfer.
- Manchester, N. Y. transfer - Lehigh Valley R. R.
- Pitcairn transfer - Pa. R. R.
- Hagerstown transfer - Pa. and N. & W. R. R.
- Harrisburg transfer - Pa. R. R.
- Potomac Yards transfer - R. F. & P., So., and A. C. L.

PHONY PEACH DISEASE

Quarantines restricting the intrastate movement within Tennessee and South Carolina of peach and nectarine trees and roots, on account of the phony peach disease, have been issued by these States. Arkansas has made arrangements to carry out similar restrictions administratively.

DATE SCALE

During the month of January the Plant Quarantine and Control Administration, cooperating with the State of Texas, conducted a scout inspection of the lower Rio Grande Valley. Ten thousand two hundred and seventy-eight date palms were inspected in the area from Laredo to Brownsville. No Parlatoria scale was found. Aside from an experimental planting of heat-treated offshoots at Weslaco and an early planting near Laredo, only two standard variety palms were found. These were Deglet Noor offshoots from Death Valley, Calif.

All of the remaining palms inspected were seedlings ranging in height from 1 to 30 feet. Most of these were ornamental or dooryard plantings although a few were in garden formation and well taken care of. Several seedling nurseries were inspected, one covering about 50 acres containing approximately 500,000 small seedlings. Adjoining the latter is a planting of about 2,860 seedlings, apparently from 5 to 9 years old in garden formation. Both the nursery and garden are evidently not receiving much care.

The following note is taken from an inspection report of a scout inspector working outside the regular date growing area in California: "Leaves have been broken down and several offshoots broken off by weight of the snow. Snow on leaves makes inspection difficult."

EUROPEAN CORN BORER AND JAPANESE BEETLE

General Project News

Minimum forces were engaged in field work during January in all divisions of European corn borer and Japanese beetle control. Activity was maintained, however, at South Norwalk and the principal subheadquarters in reconditioning and repair of equipment. Office duties also were heavy, especially those pertaining to the revised regulations, effective January 1 under the beetle quarantine, and to become effective February 5 with respect to the corn borer quarantine. A large amount of time was devoted to compilation and preparation of records, based on the findings of last summer's scouting and enforcement reports. Weather conditions continued abnormal and unseasonably mild

throughout the greater part of the territory embraced within the operations of the project.

Information concerning the European corn borer and the Japanese beetle was furnished several groups of business men and civic leaders by employees of the project who spoke before club meetings in January. Included were sessions of the Connecticut Nurserymen's Association in Hartford, the Connecticut Vegetable Growers Association at Bridgeport, the Bergen County Farm Bureau at Paramus, N. J., and the Florists Club at Springfield, Mass.

Reference previously has been made to the discussion of the corn borer and beetle quarantines in the editorial columns of metropolitan newspapers. Comment on the revision of the regulations and other matters of current interest, noted during January, in the main was friendly to the purposes of these quarantines, although many of the editors evidenced lack of information concerning the insects and the methods necessary to prevent their spread.

Noteworthy among this month's mentions of the Japanese beetle was the poem reproduced below, appearing on the editorial page of the New York Herald-Tribune for January 28. The author contributes in rhyme to that newspaper daily, his effusions having a fixed location at the end of the prose productions of the editors. This poem read as follows:

MORE TRUTH THAN POETRY

By James J. Montague

To a Japanese Beetle

The grass that once adorned my lawn
Has now become too feeble-hearted
Another year to carry on;
Its verdant glory has departed.
The plants I set in wooden tubs
Upon the porch have never flowered;
Their tender roots your avid grubs
Devoured.

And still your legions multiply;
Without so much as asking pardon
Their greed-directed teeth they ply
Upon my little kitchen garden.
The cabbage plants grew wan and lean,
The pumpkin and the squash waxed thinner,
And we had not one single bean
For dinner.

Each year you spread about the land,
A bold and most unwelcome stranger;
It's plain to me that you have planned
To wrest the produce from the granger.
Tall corn will soon succumb to you,
And presently the oats and wheat'll
Bow humbly, and surrender to
A beetle.

The insects which are reared at home,
Compared to you, but weak and few are,
And though afield they yearly roam
They're nothing like as fierce as you are.
But you in hordes keep marching on,
Devoid of brain, but still omniscient
In finding food. You're too doggone
Efficient.

Specialized Corn Borer Activities

During the summer inspectors of the Maine Department of Agriculture take advantage of every opportunity to impress upon farmers and gardeners the importance of burning all cornstalks and plowing all corn land in the fall. As the result of several year's work along this line, considerable corn borer clean-up work is done before the active educational campaign begins. In 1931 it was started about October 5 at Boothbay Harbor, where borers are present in greater numbers than in most sections of the State. A few borers were found at Friendship the past summer and State inspectors destroyed all garden refuse, dead stalks, weeds, etc., in these two localities. In the places where the presence of the borer is known or suspected, a thorough clean-up is made, the inspectors pulling up and burning corn and dead flower stalks. The land is then plowed by the owner under supervision of the State man. An oil burner for consuming garden refuse has been developed and is very efficient, reducing green stalks to ashes in a short time. After the localities where borers have been found are attended to, the inspectors direct their efforts to the balance of the quarantined area. Clean-up work in this territory is left to the property owners, whose attention is called to the matter by a printed notice referring to the necessity of the effort and quoting the statute requiring it. Voluntary action of the farmers is estimated to have been taken in 80 per cent of the cornfields in the regulated area. Two to four weeks after distribution of the notices, depending upon weather conditions, the inspectors again cover the territory and make personal calls upon farmers and gardeners who have not conformed with the indicated practice. In the past four years there have been very few instances where another call was necessary. Although the Maine law provides a penalty for failure to clean up corn land before freezing time, it never has been necessary to take steps under it.

Cleaning of automotive equipment preparatory to painting is usually a slow and tedious process. At western corn borer headquarters located at

Springfield, Ohio, advantage has been taken of the steam pressure from the high pressure boiler in the heating plant, which has made it possible to turn out twice as many small trucks with half as much labor as in the past, and gives even better results on the larger machines. Chassis and under parts of the fenders are scrubbed with kerosene, then sprayed with steam mixed with hot water, which goes on with such force as to remove all grease and large particles of tar. Occasionally, heavy coats of tarvia are removed by burning with a blow torch and scraping. Steam is taken through a direct line from the boiler, which averages 80 pounds pressure, and is connected up with 25 feet of 1-inch high pressure steam hose, on the end of which is placed 4 feet of 3/4-inch iron pipe, having a nozzle tapering from 3/8 inch to 1/4 inch attached at point of discharge. City water is turned into the steam line, where it mixes and is discharged at nearly the boiling point. Trucks, when cleaned, go to the paint shop on a turntable, where masking tape is placed on the glass and other parts which are not to be painted. A battery of lights is constructed on the back wall of the paint shop and trucks are manipulated on the turntable so that the operator of the paint gun will always have the advantage of these.

New Jersey farmers, fruit growers, and truck raisers have become much more interested in the European corn borer since it became known that a number of first-record infestations were found in the State during the summer and fall scouting. At the request of the State Department of Agriculture, made through Mr. Weiss, chief of the bureau of statistics and inspection, a Federal borer exhibit was displayed in Trenton for the annual agricultural week, January 26 to 29. Two miniature corn cribs were features which showed the loss in grain due to heavy infestation. Each contained 500 ears, one filled with ears from infested plants and the other with ears from noninfested ones. Good and bad coverage of crop remnants by plowing also was graphically indicated and in the entomological section the exhibit showed the life history of the pest with some infested products. Corn binder, with low-cutting attachment, plow equipped with coulter and covering wires, sled stalk cutter and hand hoes were exhibited in the mechanical control division. Visitors to the booth gave much attention to the various parts of the display and many of them evidently were a good deal concerned as to the menace of the borer. State agricultural officials believe the exhibit was helpful in extending knowledge of the insect and methods for its control.

The force of inspectors at the Boston subheadquarters has been further reduced by the transfer of three permanent employees to the Massachusetts Department of Agriculture for duty in connection with the enforcement of the State clean-up law in the metropolitan market garden district. Reports received for January show greatly improved conditions on truck farms and in small gardens. They also indicate that many farmers and gardeners in heavily infested sections have abandoned the growing of sweet corn and dahlias on account of the ravages of the European corn borer.

The National Flower and Garden Show, to be held in Hartford, Conn., April 2-10, will be the thirteenth annual repetition of this exhibition. Plans for the event were made at a meeting in that city on January 21 of the

executive committee of the Society of American Florists and Ornamental Horticulturists. It will be necessary to issue permits covering material entering the regulated areas from points outside before it can be returned at the end of the occasion. Arrangements for handling the matter have been made with the secretary of the organization.

A corn show held during farmers' week, January 11-16, at Purdue University, La Fayette, Ind., a point outside the regulated area, had exhibits from counties located within that territory as well as from outside, those originating in restricted localities having been given heat treatment at the Springfield, Ohio, subheadquarters, under arrangement with the Indiana Department of Agriculture. One of the treated samples was declared reserve champion in its class, and several others were given prizes.

While visiting a greenhouse establishment at Westport, Conn., on January 25, Mr. Johnson, of the South Norwalk offices, collected adult specimens of Fuller's rose beetle. This was the second time this insect has been taken in Connecticut, Mr. Johnson having found it in a Norwalk greenhouse during 1929.

Equipment from the Springfield, Ohio, subheadquarters was assembled during January at isolated infestations along the Ohio River, both in Indiana and Kentucky, for the clean-up work planned in these localities. Heavy rains made necessary indefinite postponement of the field operations in this connection.

Cut flowers of chrysanthemums and gladioli were the only products under quarantine on account of the borer for which certification was requested this month in the New York wholesale markets. Only about 10 per cent of the quantities handled in the preceding month were certified during the current period.

Department circular No. 132, "Fighting the Corn Borer with Machinery in the Two-Generation Area," to the number of about 10,000, were mailed from South Norwalk in January to a list of corn and vegetable growers in Connecticut and western Massachusetts.

Shipments of gladioli blossoms from Florida continued to arrive in the Boston markets through January. The flowers generally were of poor quality and in such bad condition that demand was limited and few were moved to places outside the regulated areas.

Forty-six carloads of shelled corn from the one-generation corn borer area were shipped to Canada in January, under permits issued by the Springfield, Ohio, offices. Of these, 24 originated in Michigan and 22 in Ohio.

Exclusive or Combination Japanese Beetle Work

At the South Norwalk headquarters, Japanese beetle trap reconditioning continued during January. Painting of the trap buckets and baffle-funnel combinations was well under way. Paint is applied by spray guns. A single electric motor is connected to three arbors. One, geared to run 16 r.p.m., is designed for use on buckets only; the other two revolve at 8 r.p.m., and may be

used either for mounting buckets or baffles. A slower speed is required in baffle-funnel painting than for painting the cylindrical bucket. The metal portions of the traps are inspected and those needing repair work are set aside. The buckets, bait containers, baffle-funnel combinations and bails are then separated and cleaned for painting. All bait accumulation is removed by means of an ordinary wire hand-brush horizontally mounted on the shaft of an electric motor. Two helpers mount the trap parts on the arbors, while two painters spray the revolving units. The helpers remove the painted parts and place them on trays for drying. The entire drying rack has a depth of seven shelves, affording space for approximately 650 combined funnels and baffles or buckets. Electric fans placed near the ceiling circulate air about the parts and hasten setting of the paint, which requires only a few hours. First-painted parts on the rack may be taken off by the time the last trays are placed. One coat of green paint is applied to the already green buckets, but two coats of white paint are required to cover properly the green baffles and funnels. The paint shop has two window ventilating fans and four flood lights for use on cloudy days and for a night shift which will be started soon. Compressed air is obtained from a 5 h.p. air compressor. At first some difficulty was experienced with water from the air line, but this has been eliminated by introducing a moisture remover in the compressor discharge line. Approximately 1,300 trap assemblies are painted in an 8-hour shift. When painted, buckets, bait containers, and baffle-funnel combinations are reassembled and packed in cartons ready for shipment. The cartons meet railroad tariff requirements, and may be shipped by freight at the minimum rate.

Another operation carried on simultaneously is the cleaning and painting of the trap rods. These rods are first run through a twin buffing machine to remove rust so that paint will adhere. The buffing machine consists of a 2-wheel buffing head driven by belt from a $1\frac{1}{2}$ h.p. motor. The wire buffing wheels are 2" wide by 10" in diameter and make 1800 r.p.m. Particles of rust are forced by the draft from the wheel through galvanized iron square tubing connected with a ventilating shaft. After the rods have been cleaned, they are placed in a shallow trough containing black asphaltum paint cut with naphtha thinner. They are then removed and hung on racks to dry, space having been provided for 888 rods. Inclined troughs beneath convey most of the excess paint into buckets. As soon as the rack is completely filled, the first rods placed on it are removed and tied into bundles of six each.

Dealers to whom the Japanese beetle quarantine restrictions will apply for the first time this year principally include produce distributors in the territory previously designated as lightly infested. The revised regulations withdraw the privilege of unrestricted movement of farm products in those sections last year defined as lightly infested. Certification is required between June 15 and October 15, the approximate period of adult beetle flight. Similar reversal of farm products exemption will also become effective in the District of Columbia and contiguous territory in Virginia, which heretofore comprised an isolated generally infested section. Reduction in the number of the products subject to certification will somewhat relieve the restrictions imposed upon commission men and other produce shippers. Copies of the regulations will be furnished dealers.

Carload lots of certified quarantined articles will, under the revised regulations, require a supplementary placard on the outside of the car testifying that the contents are certified and giving the certificate numbers. Certificates covering bulk carloads accompany the waybills, which usually remain in possession of the train crews. With the increase of fast freight service, waybills sometimes are transmitted by mail or passenger train. Under these circumstances, inspectors are unable to determine whether or not the articles are properly certified. The required placard affixed to the outside of the car will furnish ready identification.

Acting in the capacity of an inspector of the Bureau of Plant Industry, Pennsylvania Department of Agriculture, Mr. Stichter, an agent cooperatively employed by the State and Federal Departments, issues in the Philadelphia territory certificates for seed exportations by wholesale seed houses. Seeds are inspected by the regular staff of the State Bureau, and a list of the houses eligible for certification is furnished Mr. Stichter. From time to time as foreign shipments are made, he issues the required certificates, which are taken to consuls for the countries of destination who authenticate them and collect a fee. The sealed certificate is the only document required for seed entry into the principal countries permitting importations.

Soil temperature records are in process of collection by the treating division, from Baltimore, Md., Norfolk, Va., Taunton, Mass., and Painesville, Ohio. Project-owned recording thermographs have been in operation at the three first-named points since August 1, 1931, and at Painesville, Ohio, since October 12, 1931. The thermographs are tended by either project employees or cooperating State officials. Records at 6-inch depths in Silver Creek, N. Y., for the months of May, June, and July, 1922 to 1930, inclusive, have been furnished by the Bureau of Entomology. These data have been accumulated to assist in determining the period range during which suitable chemical treating temperatures obtain in different sections.

Responding to a letter requesting an explanation for having mailed, during last season's quarantine on cut flowers, a package containing roses to non-regulated territory in New York, a resident of Essington, Delaware County, Pa., pleaded ignorance of the regulations and pertinently expressed her opinion of the Japanese beetle as follows: "I suppose I am guilty of violating an act of the law, but I pledge you my word I was not aware of it at the time it was committed. I promise you I shall not do anything of the kind again for we are pestered here with the Japanese beetle to the point of distraction and I would not want to infect any other locality if I knew it."

Records compiled on the basis of dosages of fumigants applied to quarantined articles chemically treated under project supervision indicate that during 1931 at least 12,553 pounds of carbon disulphide and 1,317 pounds of calcium cyanide were employed in treatments preliminary to Japanese beetle certification. These figures do not allow for waste or spoilage. In 1930, estimates indicate that 11,811 pounds of carbon disulphide and 1,041 pounds of calcium cyanide were required.

Occasionally reports are received from State quarantine officials of the discovery of native species of insects in balled or potted stock shipped from the regulated area under certification. The certificates relate to a specific insect and testify only to the absence of Japanese beetles. Large quantities of stock are certified on the basis of freedom from infestation of the entire nursery premises or locality and no treatment has been necessary.

Advance copies of a 42-page mimeographed "Shipper's Guide" were supplied to suboffices late in the month. As soon as the remainder are available distribution will be made to classified nurseries, greenhouses, and post offices. Quarantine instructions compiled by the traffic department of the Railway Express Agency, Inc., include a list of all their agencies in the regulated area.

Space to the extent of 728 square feet has been allotted for project use in the newly-erected post office building nearing completion in Baltimore. As soon as new quarters are available the office now located at 301 E. North Avenue, Baltimore, will be closed and the personnel and equipment moved. Occupancy is promised in April or May.

Notification of removal of quarantine restrictions was dispatched during the month to 128 previously classified nursery and greenhouse establishments, eliminated from the regulated zone, effective January 1, 1932. In Maryland, 112 were affected; in Massachusetts, 14; and in Virginia, 2.

Nurseries, greenhouses, and other plant establishments in the newly-created isolated regulated zones of Erie and Altoona Counties, Pa., are receiving visits from inspectors. Each is furnished quarantine literature and detailed information concerning certification requirements.

State regulations applying the requirements of the 10th revision of the Federal Japanese beetle quarantine to intrastate shipments were made effective by the Pennsylvania Department of Agriculture on January 1, and by the Virginia State Board of Agriculture and Immigration on January 28.

MEXICAN FRUIT WORM

An adult male Mexican fruit fly was caught on the morning of January 29 in a grove about $2\frac{1}{2}$ miles northwest of Weslaco. The assistant district inspector in making his regular monthly inspection of this grove observed the fly feeding on a split valencia orange which was hanging on the outside of the tree. The fly appeared sluggish and was easily caught by hand. So far as our records show this is the first adult Anastrepha ludens ever taken on the American side of the river. Twelve additional inspectors were placed in this and neighboring groves the following morning for an intensive inspection. The result of their first day's inspection was negative. They will be kept in this area until a thorough inspection has been made. In addition to the inspection of fruit, 190 traps were placed in the groves in the vicinity of the infested grove. Permits covering the movement of fruit from groves within one-half mile radius of

the infested grove were immediately cancelled pending the abatement of the infestation.

No adult fruit flies were taken in the traps in Matamoros, which was surprising in view of the rather heavy infestation occurring in a carload of oranges received in Matamoros on the 11th from Allende, Nuevo Leon, Mexico. A total of 432 larvae and 3 pupae were recovered from the fruit in this shipment. Very light infestations were found in the fruit contained in 2 cars of oranges from Montemorelos which is situated about 10 kilometers from Allende. The owner of this fruit stated that the growers in the Montemorelos district were required by the officials to pick up and destroy at weekly intervals all drop fruit. No larval infestation was found in locally produced fruit, of which 1,477 pieces were examined during the month. All drop fruit is picked up at the time the traps are worked and carried to the office of the Mexican inspector where it is carefully examined. It is believed that a much closer examination is made under this procedure than where the inspection is made on the premises.

Four applications of poison bait spray were made in the area surrounding the premises in which an adult was caught the last of December.

Despite the low price the movement of fruit was brisk throughout the month. A total of 1,108 cars were moved by rail and 393 by truck. This is an average daily movement of 48 carloads. During the month 2,379 trucks were checked by the road stations. It is interesting to note the destination of the trucks bearing out-of-State licenses. Of such trucks, 67 were destined for points in Oklahoma, 17 to Kansas, 13 to Louisiana, 11 each to Arkansas and New Mexico, 10 to Colorado, 4 to Illinois, 3 each to Nebraska and Missouri, and 1 each to Minnesota, South Dakota, and New York.

Heavy winds and the operation of picking crews caused a heavy drop of fruit during the month, putting the grove owners to considerable trouble in keeping their premises clean. Rains in the early part of the month interfered to some extent with field work. During the month a total of 14,448 specimens were submitted for identification, of which 495 were forms of *Anastrepha*--494 from Matamoros and 1 from Texas.

PINK BOLLWORM

Gin trash inspection was discontinued at the close of January. One machine was operated outside the regulated areas for a period of about two weeks, this being at Mexicali, in Old Mexico. Conditions were very favorable for the operation of the machine in this locality; however, no signs of the pink bollworm were found.

Within the regulated areas three machines were operated in Arizona. One of these machines operated in the Coolidge-Casa Grande area, and one in the vicinity of Phoenix. The results with both of these machines were negative.

The remaining machine was operated in the Mesa area, where six specimens of the pink bollworm were found in four infested lots of material. These findings do not involve any additional territory.

During the 1931 crop season the operation of gin-trash machines was very satisfactory. In some few localities there was very little trash available for inspection, and weather conditions also interfered somewhat. In the process of ginning an average of about 1 bushel of trash is obtained from each bale. Approximately 10 acres are usually picked to secure a bale of seed cotton, therefore the examination of a bushel of gin trash is equivalent to the inspection of 10 acres. At this rate the trash examined during the 1931 season would thus represent the inspection of 1,424,270 acres, of which 836,086 acres were outside of any areas regulated on account of the pink bollworm. This is a considerable increase over the previous season; however, it should be remembered that 35 machines were operated this year as compared to 15 last year. A total of 279,591 specimens of the pink bollworm were taken with the machines this season. Of this number 275,951 specimens were from the heavily infested areas in the Big Bend and the lower part of Hudspeth County, both in Texas. No new areas were involved in the above findings.

The 54 man-days' annual field inspection on the Ivy Dale ranch, mentioned in last month's News Letter, was completed on January 16. A total of 173 living and 1,185 dead pink bollworms were collected during the inspection. This indicates that a rather general infestation exists over the ranch, which is somewhat heavier than in previous seasons. However, it should be mentioned that there has been considerable fluctuation in previous seasons, and it is possible that next year's results may show a considerable reduction. So far it has not been possible to make accurate comparisons between the field inspection and the gin-trash inspection, due to the fact that it was so late in the season that a very poor class of trash was available for inspection.

The inspection of seed samples from the Big Bend, to check the efficiency of sterilization, has been continued. At this time something over 3,000 specimens have been found, all of which were dead, thus indicating that sterilization has been efficient. Counts to determine the number of living worms left in the fields in the Big Bend have also been continued. Due to the fact that winter plowing is now getting under way, it has been necessary to rush the collection of material from the fields, which has made it impossible to inspect the material from each field as it is collected. This is being stored and will be inspected as soon as all collections have been made. Plans had been made to make some counts in fields on the Mexican side of the river; however, it was found that the cotton fields had already been plowed.

A survey to determine the distribution of the *Thurberia* plant and weevil in southwestern Arizona is now under way. Such a survey was conducted about 1927, but no steps have since been taken to determine whether or not plants found at that time had since become infested. So far it has been found that plants which were known to exist in the vicinity of Globe and Safford have increased considerably. Several days have been devoted to inspecting the plants found for the presence of the *Thurberia* weevil, with negative results

so far. A rather thorough inspection will be made as soon as the present distribution of the plants is finally determined.

The ginning season is rapidly drawing to a close. With the exception of the Salt River Valley, most of the cotton now being ginned is bollie cotton. This class of cotton is worth almost as much as middling cotton, and due to economic conditions a considerable amount is being gathered, especially by Mexican laborers who have very little other opportunities of making any money. The sterilization of cottonseed continues to be very satisfactory. As each gin finishes the season's operations, the entire plant and premises are given a thorough cleaning. Excellent cooperation is being secured from the ginners in this work.

One interception of infested material was made at the Alpine, Tex., road station on January 31. A truck which had been used to haul cotton in the Big Bend stopped for inspection, and $1\frac{1}{2}$ pounds of seed cotton and one-fourth pound of cottonseed was found. An inspection of this material resulted in the finding of 11 living and 44 dead pink bollworms. The interception was made at 6.30 a. m., which at this time of the year is rather dark, thus indicating that a thorough inspection was made.

The inspection of green bolls at the San Antonio laboratory was begun during January. At the end of the month 47 crates had been examined, with negative results. This material represents fields in Arkansas and Oklahoma. It will be recalled that each crate contains 10 samples of approximately 100 bolls each. This work is being carried on by a force of 10 inspectors.

PREVENTING SPREAD OF MOTHS

On January 11, 1932, the Federal crews completed the scouting work planned for the current fiscal year in the mountainous woodland areas in the Adirondack region of the barrier zone in New York. This program consisted of scouting work in the following towns in New York: Chesterfield, Crown Point, Essex, Ticonderoga, Westport, and Willsboro, in Essex County; Dresden and Putnam, in Washington County; and Hague, in Warren County. There were approximately 195,528 acres of woodland and 545 miles of road examined with negative results. On the whole, the weather was very suitable for the scouting work as there was very little rain, snow, and ice which would have made the necessary work in this mountainous region more hazardous. Nevertheless, there were 34 cases of personal injury reported from this section during the scouting period involved which started on July 1, 1931. Of these cases, only one was of serious nature, the others consisting chiefly of sprains, bruises, and lacerations.

In this one instance, an employee accidentally dislodged a large rock which fell on his right leg, breaking it above the knee.

With the exception of two crews in Dorset, Vt., and two crews in Rupert, Vt., engaged in the examination of woodland areas, all of the scouting

force is now employed in southwestern Massachusetts and northwestern Connecticut in an area requiring intensive scouting. Up to and including January 31, 1932, there have been found in this area 34 sites infested with the gipsy moth. Of these 34 infested locations, 29 are in Massachusetts as follows: 16 in New Marlboro, consisting of 112 new egg clusters; 3 in Sandisfield, consisting of 4 new egg clusters; 9 in Sheffield, consisting of 85 new egg clusters; 1 in Tyringham, consisting of 9 new egg clusters. The remaining 5 infested sites are in Connecticut as follows: 2 in Canaan, consisting of 52 new egg clusters; 1 in Salisbury, totaling 12 new egg clusters; and 2 in Warren, aggregating 20 new egg clusters. The intensive scouting work planned has not yet been completed at any of the above towns.

During January there were only 27 shipments of quarantined products offered for inspection in New Jersey, although the weather there was very favorable for this activity. It has been reported that signs of spring may be noticed in some areas of New Jersey. Shrubs bearing large leaf buds were observed as well as a blooming Japanese quince bush.

On Long Island, in Nassau County, there were but six lots of nursery stock inspected during January. Owing to the dullness of the nursery stock shipping season, arrangements were made with the Conservation Department of New York for the quarantine inspector who is located at Roslyn, L. I., to scout certain areas for the gipsy moth when his time is not required for the inspection of nursery stock.

This office has received a map and report from the New York Conservation Department which indicates that 38 scouting crews were engaged in the examination of wooded areas during January in the following barrier zone places in New York: Hampton, in Washington County; Ghent, in Columbia County; Southeast, Kent, and Phillipstown, in Putnam County; Yorktown, Scarsdale, Bedford, Rye, North Castle, and Mamaroneck, in Westchester County; Northeast, Amenia, and Poughkeepsie, in Dutchess County. There have been no gipsy moth infested sites found by the New York State force during the current fiscal year in the New York portion of the barrier zone area.

There are four crews engaged in scouting work in Hempstead, Nassau County, L. I. In addition to this work, there is a crew of three men making an examination of the area in the vicinity of where gipsy moth infested sites have been found in past years in South Hampton, Bridge Hampton, Montauk Point, Southold, Patchogue, Brooklyn, and Prospect Park, Brooklyn. An examination will also be made at Shelter Island if the work can be so arranged. This constitutes all of the infested sites that have been found on Long Island, except Kew Gardens and Islip. Brick structures now cover the site and surroundings where the colony was located at Islip during the fiscal year 1926.

A field supervisor observed some dead leaves on the ground at Stockbridge, Mass., during January that showed evidences of arsenate of lead spray. This area, where the leaves were found, was sprayed last season by this project, at which time there was used 4 ounces of light pressed fish oil with every pound of arsenate of lead. This observation readily indicates the

adhesive properties of the fish oil.

The Massachusetts State Highway Department has been chopping underbrush and cutting down trees that are in poor condition along the highways in Sheffield, Mass. This has, of course, aided our work to some extent, particularly so as it occurs in the vicinity of where we are doing intensive scouting work.

There are various phases of extermination work planned in certain areas yearly which must necessarily be given priority, chiefly because of natural conditions beyond human control. In New Jersey, for instance, as well as in some parts of the New England portion of the barrier zone, scouting work in low swampy places is usually done during cold weather while the streams and swamps are frozen. In the spring, areas of this kind become flooded and it would be impossible to scout them, and in case an infestation existed in these areas, spread might occur by being carried on drifting debris. There are sections of the barrier zone in the mountainous regions of southwestern Massachusetts and northwestern Connecticut that are abundantly infested with rattlesnakes. This is also true in the Hudson River Valley of New York. It was, therefore, advisable under these conditions, to leave the necessary scouting work in these areas until the time when the snakes had hibernated for the winter. The scouting work in northern New York was begun on July 1 in order to avoid as far as possible interference with the work on account of snow. Advantage was taken during the latter part of January of the lack of snow to complete the examination of stonewalls, deadwood, and trunks of trees for a distance of approximately 3 feet above the ground, in the areas being scouted in southwestern Massachusetts and northwestern Connecticut. This type of work is called ground work.

In reporting various shipments which may be inspected and certified each month, and in noting any especially interesting shipments which may have been handled, it is the practice to refer to them in terms of the largest units. If the materials have gone out by the carload, this unit has been mentioned on the reports rather than the number of individual articles contained in each carload. The amount of inspection necessary for such large shipments, therefore, may not be entirely apparent to one who is not familiar with this work. In the past it has been reported that numerous barge loads of lumber have been shipped after inspection from one of the river ports of southern Maine. Each barge holds the equivalent of from 25 to 30 or more carloads, but even these figures do not give an accurate idea of the amount of inspection necessary before the shipments are certified. Inspection of lumber at the aforementioned port has been in progress intermittently for about two years, except when ice in the river prevents the barges from reaching the loading dock. Since the inspection was started, 18 barge loads have been sent out and each was loaded with approximately 235,000 to 490,000 board feet. In all, over 6,250,000 board feet have been inspected. The average load consists of about 350,000 board feet, and as there are approximately 7 feet in each piece, it can be seen that the inspection of each barge load involves the handling of about 50,000 pieces of lumber. The individual pieces are 2-inch planks cut direct from the logs without being finished in any way and all have rough bark edges. The lumber is drawn from an area where gipsy moth infestation conditions vary

and prior to hauling may have been piled so as to be exposed to infestation. In order to make a thorough inspection, it is necessary to examine each plank on the faces, edges, and ends.

A quarry shipment of unusual size was shipped from Barre, Vt., to a New York City cemetery. It was a mausoleum roof fashioned from a single piece of granite and measured when finished 23' 9" long, 12' 6" wide, and 1' 6" thick, and weighed approximately 40 tons. The shipment was very difficult to handle on account of its size and weight. The ordinary freight car would not serve as a carrier and it was finally necessary to obtain a so-called well-car which had been designed to carry one of the big coast defense guns during the recent World War. After loading the boxed stone, it was secured in place with nearly 3 tons of heavy timbers. As the stone itself was freshly cut from the quarry, there was no danger that it might be infested with the gipsy moth, but the timbers used for blocking and boxing materials had to be examined carefully, particularly the former, because blocking materials may lie around for a considerable period before being used. Obsolete derrick booms and bridge timbers, which could not be used any longer as such, were used by the quarrymen in blocking this mausoleum roof. A special routing was planned to allow proper clearances from Barre, Vt., to New York City.

The warm weather in January caused the ice to go out on several occasions from the Winooski River and the resulting flood conditions temporarily closed the stone cutting sheds in the vicinity of Montpelier and Barre, Vt. There are nearly 200 of these stone cutting sheds located near the river banks.

A probable reason for the falling off of carload shipments of quarantined products and the increase in truck shipments was evidenced recently when 2 truck loads of cordwood were inspected and certified in southern New Hampshire for shipment to Rye, N. Y. The truck owners throughout New England are apparently underbidding the freight transportation rates.

There were 33 tourist camps located in the New England gipsy moth quarantined area inspected during January, 6 of which were found to be infested with the gipsy moth.

The delivery of 22,000 feet of 1-inch high pressure spray hose was completed during January. This hose is specially constructed to withstand a working pressure of 1,000 pounds.

Effective February 7, the telephones in Greenfield changed over to the dial system, and on account of this change new telephone numbers have been assigned in all cases. The new telephone number for the Gipsy Moth Office is 3648.
